Implementing the Step It Up Walking Program for Hospital Nurses to Increase Physical Movement

Molly Persby

University of Massachusetts - Amherst

Follow this and additional works at: https://scholarworks.umass.edu/nursing_dnp_capstone

Part of the Nursing Commons

Persby, Molly, "Implementing the Step It Up Walking Program for Hospital Nurses to Increase Physical Movement" (2016). Doctor of Nursing Practice (DNP) Projects. 67.
Retrieved from https://scholarworks.umass.edu/nursing_dnp_capstone/67

This Open Access is brought to you for free and open access by the College of Nursing at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Doctor of Nursing Practice (DNP) Projects by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.
Implementing the Step It Up Walking Program for Hospital Nurses to Increase Physical Movement

Molly J. Persby

UMass College of Nursing

DNP Project Chair: Karen Kalmakis

DNP Project Committee Member: Jean DeMartinis

Capstone Mentor: Rhonda Dailey

Date of Submission: April 27, 2016
# Table of Contents

Abstract ........................................................................................................................................... 3

Introduction ..................................................................................................................................... 4

  Problem Statement...................................................................................................................... 5

Review of the Literature ................................................................................................................. 5

Theoretical Framework .................................................................................................................... 13

Project Design and Methods ......................................................................................................... 15

  Setting and Resources ................................................................................................................ 16

  Description of the group ............................................................................................................. 16

Goals and Objectives ...................................................................................................................... 16

Implementation Plan ...................................................................................................................... 18

Ethics and Human Subjects Protection .......................................................................................... 20

Data Analysis Plan ......................................................................................................................... 20

Results ............................................................................................................................................ 21

Discussion/Interpretation ............................................................................................................... 24

Conclusion..................................................................................................................................... 25

  Dissemination ............................................................................................................................ 27

References ....................................................................................................................................... 28

Appendices .................................................................................................................................... 31
Abstract

Nurses are at risk for obesity due to shift work, long hours, abnormal eating patterns and job stress. Obesity places nurses at risk for chronic health conditions such as diabetes and coronary artery disease. The goal for this project was to translate evidence of weight loss using the Step it Up Program by launching a pedometer-based walking program for nurses. Measurement methods included pre-intervention measurements of waist and hip circumference in order to calculate waist/hip ratio, and calculate Body Mass Index using a standard BMI Calculator. Fifteen nurses from an inpatient unit of a hospital in southeastern Ohio were issued a FitBit to record the number of steps taken per day, and were then challenged to increase the number of steps per day. Monthly waist and hip measurements, BMI, and steps per day were obtained, demonstrating a total weight loss of 112.2 pounds for the group over a three-month intervention period. The waist/hip ratio for the group decreased from 0.94 to 0.93 and the participants stated that wearing the device and utilizing the phone app provided positive motivation. The nurses involved in the intervention were motivated to walk more as a result of wearing the devices, as they were more aware of how little they were moving.
Introduction

According to Healthy People 2020, there has been a dramatic increase in obesity in adults over the last twenty years. This is due to a number of factors including more sedentary lifestyles, easy access to fast foods, and exploding portion sizes (HealthyPeople.gov, 2014). The easiest fix to this issue is adopting a more active lifestyle (CDC, 2010). Simply moving more is the first step towards making positive change to fight obesity. Obesity is a major health problem in developed and developing countries. Inhabitants of countries with easy access to energy-rich foods and low physical activity are at increased risk of becoming obese (Anderson, 2009). The challenge of reversing the worldwide obesity epidemic has prompted agencies such as the World Health Organization and the U.S. Surgeon General to recommend moderate physical activities programs for everyone (Chan, 2004). Healthy people 2020 highlights the lack of significant improvement in reaching obesity hallmark goals. In addition, one of the goals of Healthy People 2020 is physical activity. Physical activity can improve health and quality of life; it also reduces the risk of coronary artery disease, stroke, high blood pressure, diabetes, some cancers and depression (HealthyPeople.gov, 2014).

Nurses are at high risk for obesity due to the nature of shift work, which is positively associated with abnormal eating behaviors, decreased energy levels and lack of exercise (Wong, 2010). As part of their role, nurses provide health coaching and education to patients regarding diet and exercise. In order for nurses to provide this education and be taken seriously, they must be able to demonstrate and
role model the behaviors they are teaching (Polat, 2015). Results from the Harvard Nurses’ Health Study showed that 60 percent of respondents reported being either overweight or obese, more than half said they exercised less than two hours a week. Through the results of the study, the Harvard Nurses’ Health Study has been able to show that diet, physical activity and other lifestyle factors positively impact health. Physical activity reduces the risk of breast cancer, cardiovascular disease, colon cancer, hip fracture, and reduces the risk of cognitive impairment (Channing.harvard.edu, 2015).

Problem Statement

Due to the effect of shift work on circadian cycles, participating in abnormal eating patterns and experiencing stress, nurses are at high risk for developing obesity. Obesity places nurses at risk for numerous chronic health conditions including diabetes and high blood pressure. All of this is exacerbated by a lack of core or total body aerobic movement. Lack of walking programs designed for nurses who are assigned to shift work within healthcare facilities also impacts this phenomenon.

Review of the Literature

In order to further investigate the issue, a literature search was performed utilizing PubMed and the search terms “obesity”, “nurses”, “physical activity” which produced 37 pertinent articles. Only full-text articles obtainable through the University of Massachusetts library system were utilized, producing 14 articles for review. These articles were reviewed using the John Hopkins Nursing Evidence-
Based Practice Model and are grouped according to their level of evidence, with 1 demonstrating the greatest strength of evidence. There were seven Level 1 articles reviewed, primarily randomized controlled trials; three Level 2 quasi-experimental articles; four Level 3 articles, which were either non-experimental or qualitative studies.

Of the seven Level 1 articles that demonstrated the highest level of evidence, Edwards, Stapleton, Williams and Ball (2014) studied the impact of motivational interviewing training. This quasi-experimental randomized control study explains that motivational interviewing training for healthcare providers can quickly help build confidence and knowledge in the provider’s ability to provide health counseling training. Motivational interviewing has shown success in securing positive changes related to lifestyle issues and would be an important factor to consider when providing counseling regarding obesity. Motivational interviewing should be used when encouraging increased physical activity with the participants in a walking program in order to help sustain their level of activity. This study was undertaken in Australia due to the high rate of obesity; 57.3% of all adults are classified as overweight or obese and 43.4% are not exercising sufficiently to demonstrate a health benefit (Edwards et al, 2014). The motivational interviewing technique taught was found to increase the confidence of the trainees and also found to be sustained over time. Providing motivational training to those who need to engage in more exercise is one of the possible solutions to the issue of obesity.
Two of the reviewed articles were randomized controlled trials that showed the effectiveness of internet interventions to target exercise interventions. A 12-week internet intervention among 120 overweight adolescents was conducted (Riiser, Londal, Ommundsen, Smastuen, Misvaer, Helseth, 2014). There were 108 participants who completed the study, 75 in the intervention group and 33 in the control group. The intervention group received an activity plan, completed an activity diary, received feedback, and had access to an online information page with articles and subjects relevant to the intervention. The intervention group had a decrease in their Body Mass Index, an increase in their perception of healthcare quality of life and improved their cardiorespiratory fitness, which was measured by a running test (Riiser et al, 2014). Providing participants enrolled in a physical movement program with structure and feedback helps insure their success (Riser, et al, 2014). A structured versus a nonstructured internet-delivered exercise recommendation program in was studied in a randomized control trial of 140 automobile company employees (Pressler, Knebel, Esch, Kolbi, Esefeld, Scherr, Haller, Schmidt-Truckass Krcmar, Halle, Leimeister, 2010). The structure group received an exercise schedule and the nonstructured group had the ability to choose their workouts from a website. Both groups demonstrated improvements in their exercise capacity and decreases in their BMI (Pressler, 2010). However, there was no additional benefit noted to the structured group that received an exercise assignment. What was learned from this study is that implementation of a workplace exercise program can have an impact; delivering a prescribed exercise
plan does not have an additional impact. Both programs showed improvement in activity levels of the employees, but both programs also had high dropout levels. The takeaway from these two articles is that the internet could be utilized as an adjunct to an exercise initiative, but cannot be completely relied on for effectiveness. Both studies were of high quality and of the highest strength of evidence.

Workplace walking programs were evaluated in four studies. All four were randomized control trials, constituting the highest strength of evidence. “Goal setting” in the workplace was studied as a means to increase physical activity (Dishman, DeJoy, Wilson, Vandenberg, 2009). Individual and team goal setting was utilized in the workplace and was able to increase the proportion of employees who were participating in moderate or vigorous exercise from 31% at the beginning of the intervention to 51% at its conclusion with 1442 employees at 16 different worksites. Individual goal-setting included use of pedometers, daily logs, goal-setting, strategies to overcome sedentary temptations, avoiding relapse and staying motivated. The team “goal setting” involved teams of 5-20. Posters were placed in the workplace that recorded and compared team goal attainment and team members received t-shirts if 75% of the team members achieved the team goals. This intervention’s participants were able to increase the number of steps taken per day and increased their steps to 9,000 per day for the last 6 weeks of the intervention, helping to prove that use of a pedometer increases the amount of physical activity (Dishman et al, 2009). In addition to goal setting, this intervention
IMPLEMENTING THE STEP IT UP WALKING PROGRAM

relied heavily on management support, which was felt to be integral to the program’s success. This is a strong study with high quality evidence.

The final three Level 1 randomized control studies involved walking programs that were implemented in the workplace. The first intervention utilized telephone support and the use of pedometers (DeGreef, Deforche, Ruige, Bouckaert, Tudor-Locke, Kaufman, Bourdeaudhuij, 2010). Ninety-two participants were randomized into two groups; one group received a pedometer and weekly phone support; the other group received no intervention. The intervention group was able to demonstrate an increase in the number of steps taken per day by 2,744, while the control group decreased the number of steps taken by 1,256. This intervention also included phone-following weekly and demonstrated lasting, positive effects on the intervention group. This was a convenient way to increase physical activity and is a high quality study.

In a meta-analysis of workplace physical activity interventions (Conn, Hafdahl, Cooper, Brown, Lusk, 2009), the authors reviewed published and unpublished intervention studies that took place between 1960 and 2007. While there are a variety of interventions detailed in the literature, there are no consistencies between the reports in how physical activity is measured, nor how successes are recorded. Conn did find that workplace physical activity interventions are effective in reducing absences and job stress and increasing job satisfaction. Interventions also demonstrated a positive impact on BMI for the participants. This meta-analysis could not determine if there is an additional exercise benefit by
allowing employees to participate while on work time, nor could the analysis
determine whether or not employer-provided fitness facilities provide an additional
motivator (Conn, 2009). This is a high-quality review of 105 workplace programs
and demonstrates the effectiveness of a workplace-level intervention. A study was
conducted to investigate the effect of a walking intervention on 315 patients
utilizing the Theory of Planned Behavior, which was explained to patients by nurses
and nursing assistants (Williams, Michie, Dale, Stallard, French, 2015). While
walking programs have shown to be effective in other studies, in Williams' study,
implementation of the walking program utilizing the Theory of Planned Behavior
was no more effective than other programs. This was due to the fact that the nurses
and nursing assistants who explained the program were ill-equipped due to a lack of
training regarding the theory. This study validates that walking offers considerable
health benefits including reduced body weight, increased fitness levels and lowers
cardiovascular and cancer risk. This study provided a high strength of evidence and
was of good quality.

Three quasi-experimental studies provided evidence regarding the feasibility
of an activity intervention. Two of the studies examined the use of a pedometer and
one examined the use of the internet intervention. A culturally relevant internet
program was implemented to focus on African-American females (Joseph, Pekmezi,
Allison, Durant, 2014). The sample sizes were small and the population studies
were so specific that the results are not necessarily generalizable to other
populations. Therefore, this evidence was of poor quality.
In two quasi-experimental studies, a workplace-sponsored pedometer program was found to be effective in increasing the number of steps that the participants took each day and also decreasing their Body Mass Index. One-hundred and six workers were enrolled over a 12-week intervention (Chan, Ryan, Tudor-Locke, 2004) and in another study, 762 workers were enrolled, with a 79% retention rate (Freak-Poli, Wolfe, Backholer, deCourten, Peeters, 2011). In both studies, researchers were able to provide evidence of increased physical activity through use of a pedometer, along with decreases in different body measurements and cholesterol levels. Chan’s work was focused on sedentary workers, as these workers are at greater risk of becoming obese because their typical workday does not involve much activity. Freak-Poli and colleagues enrolled 762 participants to wear a pedometer for 125 consecutive days with a goal of taking 10,000 steps per day. Freak-Poli’s study had a 79% retention rate and demonstrated a 6.5% increase in activity and a decrease in waist circumference of up to 1.6cm. This was part of the Global Corporate Challenge, which is a competitive program aimed at increasing physical activity (Freak-Poli et al, 2011). Both studies were high quality, with sufficient sample sizes and consistent results.

Three of the qualitative descriptive studies dealt with nurses’ lifestyle behaviors and the barriers to living a healthy life. A cross-sectional study of hospital nurses was conducted to determine if there is an association between shift work and abnormal eating patterns (Wong H, Wong M, Wong S, Lee, 2010). There were 378 nurses who participated in the study. Only 66.7% of the respondents had a
normal Body Mass Index and those who worked four or more night shifts per month were three times more likely to engage in abnormal emotional eating behaviors. The relationship between shift work and abnormal eating is not completely clear; however, this cross-sectional study did show that more health-promotion activities should be offered for nurses that work the night shift in hospitals. The study showed that shift work is positively associated with abnormal eating behavior, leading to the risk of obesity (Wong et al, 2009). A qualitative descriptive study examined nurses’ lifestyle behaviors by conducting focus groups with a total of 103 participants. Their findings were consistent with Wong's; hospitals are stressful work environments and shift work places an additional strain on nurses. The perceived stress and lack of time causes fatigue and prevents the nurses from taking the time to prepare healthy meals or exercise. Phiri’s findings also support the need for healthcare employers to support their nurses in managing stress and to make changes to the work environment to help facilitate healthier lifestyles. Hospitals are a stressful work environment and shift work places an additional strain on nurses (Phiri et al, 2014). Both studies were of high quality and produced consistent results.

A survey of 245 nursing students was conducted to determine health-promoting behaviors in nursing students (Polat, Ozen, Kahraman, Bostanoglu, 2015). Forty per cent of the respondents were smokers and over 20% were obese. Polat’s survey attempted to demonstrate that nursing students are no healthier than their graduated counterparts. There were no recommendations from Polat’s study,
making the strength of the evidence very weak. Finally, a systematic review revealed evidence that worksite nutrition and physical activity programs are effective in achieving moderate decreases in employee weights and Body Mass Index measurements (Anderson, Quinn, Glanz, Ramirez, Kahwati, Johnson, Buchanan, Archer, Chattopadhyay, Kalra, Katz, 2009). Anderson’s review also discussed the association between excess body weight and the heightened risk for occupational injuries. She stated “studies of characteristics of working conditions and worker overweight or obesity have shown associations between greater BMI and long work hours, shift work, and job stress” (Anderson et al, 2009). While this review was of good quality, it did not exhibit strength of evidence and merely shows consistency with the other qualitative studies.

Previous studies provide evidence that the use of a pedometer-based walking program is effective in increasing the number of steps taken per day. Increasing the number of steps taken per day has a positive impact on BMI and body measurements, thus decreasing the nurses’ risk for obesity and chronic health conditions. The Step It Up Walking Program will translate the evidence to the community of nurses that were selected for the intervention.

**Theoretical Framework**

The Health Belief Model was used as the theoretical framework for this intervention. There are six major concepts and propositions of the Health Belief Model, including Perceived Susceptibility, Perceived Severity, Perceived Benefits, Perceived Costs, Motivation and Enabling or modifying factors.
The first two factors are individual perceptions. Perceived Susceptibility refers to the individual’s perception that the health problem is personally relevant. In the matter of the pedometer-based exercise program, it was necessary to weigh the participants and calculate their Body Mass Index and provide them with information that being overweight or obese places them at increased risk of chronic health conditions such as diabetes or coronary artery disease. For the nurse participants, they need to experience perceived severity, which is when they understand the amount of susceptibility and also understand that it will impact them. The nurse participants needed to internalize that failing to exercise and being overweight actually places them at risk.

The third factor is perceived benefits: that is, the participants need to believe that increasing the number of steps taken per day will have positive benefit on their health. The next factor is perceived costs; this was not a factor for this intervention, as there was no cost to the participants.

Motivation is the fifth factor in the Health Belief Model. Motivation includes “the desire to comply with a treatment” (Currentnursing.com, 2013) and the belief that people should do what is right. Motivation was provided in this intervention through competition, feedback and recognition.

Modifying factors are the final factor. They include personality variables, socioeconomic factors and personal satisfaction. Modifying factors for this intervention included the level of support, encouragement or discouragement that participants received from family and friends. Family and friends can be supporting
and encouraging or they can minimize the importance and impact of the intervention. Outside influences, or modifying factors, are important to consider and can have an impact on the individual’s belief in the intervention. The literature supports using an exercise-tracking device for sustainable activity benefits. Increasing the level of physical activity assisted the participants in achieving a lower BMI and decreasing their waist-to-hip ratio measurement. The evidence further shows that walking programs have been effective in increasing levels of physical activity when implemented in the workplace.

The intervention is titled the Step It Up Walking Program, which was a program to track the number of steps that participants take, encouraging them to increase their level of physical activity. The Health Belief Model was used to understand what factors would motivate the nurses to participate. By understanding the severity and risk of obesity and seeing successes in weight loss due to increased physical activity, the nurses remained motivated to participate in the intervention.

**Project Design and Methods**

The design for this DNP Capstone Project was a public health intervention including a pre- and post-intervention design with repeated measures analysis. Body size and movement data were obtained through pre- and post-intervention measurements of number of steps taken per day, calculation of waist/hip ratios and BMI measurements. In addition, focus group comments, participant interviews and
blog entries were used to gather feedback regarding participation in the intervention.

Setting and resources

Description of the group, population or community. A two-hospital health system serving the population of southeastern Ohio and western West Virginia was the setting for this intervention. This is a rural area that struggles in areas of household median income and has a low percentage of high school graduates. The counties served by this health system have high numbers of families below the poverty level and free school lunch eligibility. This can be partially attributed to a lack of jobs and/or the weak economy. In order for there to be improvement in health, advances are needed in the areas of social and economic growth. In performing a simple windshield assessment of the community, the area is populated with fast food establishments and a lack of green spaces, like parks or sidewalks.

Goals and objectives. There were several goals associated with this intervention. The goals, objectives and outcome measures are listed below.

Goal One: To conduct a participatory exercise program on a designated nursing unit.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Outcome Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create buy-in within the identified nursing unit; the nurses need to perceive the need to decrease their BMI.</td>
<td>A minimum of 30% of the nurses assigned to the unit will participate in the intervention.</td>
</tr>
</tbody>
</table>
IMPLEMENTING THE STEP IT UP WALKING PROGRAM

Goal Two: To increase the number of steps taken per participant per day incrementally until reaching a goal of 10,000 steps per day.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Outcome Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through the use of a pedometer, the participants will be motivated to increase their level of physical activity.</td>
<td>Participants in the Step It Up Walking Program will increase their number of steps taken per day to 10,000.</td>
</tr>
<tr>
<td>Conduct pre- and post-test Body Mass Index and waist and hip circumference measurements at designated time intervals among the nurse participants.</td>
<td>Nurse participants will utilize a standard BMI calculator and report their BMI and waist to hip ratios during the designated reporting periods.</td>
</tr>
<tr>
<td>Nurse participants will decrease their Body Mass Index and demonstrate a decrease in waist to hip ratio.</td>
<td>Nurse participants will demonstrate a decrease in Body Mass Index and waist to hip ratio of 5% by the end of the intervention.</td>
</tr>
</tbody>
</table>

Goal Three: There will be an improvement in quality of life for nurse participants related to increased levels of fitness, decreased Body Mass Index, improved sleep and enhanced self-image.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Outcome Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants in the Step It Up Walking Program will experience self-reported increased quality of life.</td>
<td>Nurse participants will self-report greater levels of energy, motivation to increase their steps/day and satisfaction with the increased activity levels during monthly assessments, focus groups and 1:1 sessions.</td>
</tr>
<tr>
<td>Provide participants in the Step It Up Walking Program with a method to communicate.</td>
<td>A blog will be created for participants, allowing them to share successes, challenges and motivate one another. Success of the blog will be measured by blog entries.</td>
</tr>
</tbody>
</table>
Implementation Plan. To accomplish the objective of the Step It Up Nurse Walking Program participants physical size was measured prior to the intervention and at one and two-month intervals. Waist and hip circumference, height, and weight of each participant were recorded at baseline. Body Mass Index scores and waist-to-hip ratio were calculated from this data. Participants were then issued a FitBit, which is a pedometer that us worn on the participants’ wrists and linked to a computer and/or smart phone.

The FitBits were purchased in three different colors: pink, lime and blue. The color of device assigned to each participant was chosen at random, and the participants were placed into one of three teams (pink, blue or lime) based on the color of device they were issued. Instructions for use (Appendix A) and syncing (Appendix B) of the device were provided to all participants. The participants engaged in their normal level of activity for two weeks to obtain a baseline exercise level. This data was recorded by the DNP candidate.

The Surgeon General has recommended that Americans increase their physical activity by 30 minutes per day and increase the number of steps they take to 10,000 per day (Shapeup.org, 2015). The nurses had an ultimate goal of 10,000 steps per day. After obtaining a baseline, the participants were challenged to increase the number of steps taken per day by 500 each week. After one month of participation, the DNP candidate remeasured the participants to obtain their waist and hip circumference and calculate their Body Mass Index to evaluate for changes.
The exercise tracking devices were linked to smart phones and the DNP candidate also had access to the results of the exercise tracking devices. This allowed the DNP candidate to provide feedback, support and encouragement to the participants, demonstrating that the use of a pedometer helps inspire those participating in the intervention to maintain 10,000 steps per day. Participants were encouraged to share their successes and thoughts regarding the intervention at any time by utilizing the online webspace and the app on the smart phones. In addition, since the DNP candidate was interacting daily with the participants, it was possible to offer real-time coaching and encouragement. A private, online blog for the participants was created, allowing the participants to interact with one another and share their thoughts at any time, providing motivation and support and sharing successes.

The unit selected for this intervention was one of the inpatient units at the health system. This is a 24-bed unit with a high turnover of patients. The staff were literally on their toes with the unpredictable workload. The unit activity pattern often made it difficult for the staff to take scheduled breaks, which places them at risk of developing poor eating habits and also places them at risk of injury due to fatigue.

Participation in the Step It Up Walking Program was the initial step in helping staff to take better care of themselves. One of the reasons the nurses cite for failing to participate in exercise is a lack of time. Providing the staff with an activity tracking device helps them see how much they are or are not moving and provided
motivation to take at least 10,000 steps per day. The majority of these activities took place in the workplace, providing a venue for interaction and support. Nurses were encouraged to wear their FitBits around the clock and were also encouraged to walk outside of work hours. This also provided an engagement activity for the staff, who at times, feel as if they are not part of the bigger health system.

The ability to participate in this health intervention was offered to all the nursing staff in the inpatient unit; whether they choose to participate or not is voluntary. The opportunity to participate in the intervention was offered during staff meetings in the designated month, which are offered on Tuesdays and Thursdays at 7:30am and 4:00pm. These meeting times were determined to be most convenient for staff and generate the highest attendance. Staff immediately expressed interest in the intervention. A sign-up sheet was posted and enrollment was limited to the first fifteen staff members, representing 37.5% of the staff.

**Ethics and Human Subjects Protection.** Measurements were obtained in a private office, affording privacy to the participants during the weighing and measuring process. The data collected for the intervention was kept secure on a password-protected computer that was in a locked office. The participants’ names were kept confidential and there was no risk to the participants.

**Data Analysis plan.** The initial results from the weigh-in and measuring were recorded in a table. Subsequent weights and measurements, along with the average number of steps taken per day, were also recorded in the table (Table 1). Bivariate statistics were used to compare body measurements to determine
decreases in weight for the group, a percentage decrease in weight, waist to hip ratios for the group, and decreases in the waist to hip ratio. Initial BMIs were also calculated and shared with the participants. At the completion of each monthly weighing and measuring event, the results for each group (pink, lime and blue) were aggregated and shared. Participants shared results among each other and utilized the phone app to track the number of steps that each person was taking; the phone app in conjunction with the FitBit proved to be the most motivating parts of the intervention.

Results

Fifteen nurses quickly volunteered to participate in the intervention. Fourteen women and one man comprised the group. Six of the nurses worked the night shift and nine worked the day shift. They ranged in age from 24 – 45 and everyone was Caucasian. All fifteen nurses loaded the FitBit app onto their phones and utilized the app to send one another messages, challenging one another to move more and attempting to move into ‘first place’ by logging the most activity. All nurses that accepted a FitBit were compliant with the monthly weighing and measuring and every nurse had a decrease in weight or inches, or both.

The participants were very active in utilizing the phone app to communicate with, challenge, and motivate one another. The private online space that was created for the nurses was not utilized by the nurses for communication. When asked why, the nurses stated that it was quicker and easier to utilize their smart phones than to log onto a web site. The phone app provided instant access and
IMPLEMENTING THE STEP IT UP WALKING PROGRAM

communication among the participants. The phone app also allowed the DNP candidate to see which participants needed reminders to wear their devices and which ones needed to move more.

Since the DNP candidate had the opportunity to interact with the nurses on a daily basis, it was possible to seek real-time feedback. One of the nurses reported that she would check the phone app near the end of each day to see how her activity ranked when compared to the other nurses. If she was not number one or number two, she would walk through the cemetery near her home until her activity put her in first place. Every team demonstrated positive results, but some team members had remarkable outcomes. The total weight loss for the participants was 112.2 pounds, which is a decrease of 3.5% for the group. Of the three teams, the Lime team had the most remarkable results, with an impressive weight loss of 46.4 pounds or 4.6%. Weight loss ranged from a maximum of 19.8 pounds to a minimum of 1 pound; the average weight loss was 7.5 pounds. At the beginning of the intervention, not a single participant had a normal Body Mass Index (BMI). Everyone had a BMI that was greater than 25, with the lowest initial BMI of 27.6. In addition, there were staff members whose waist and hip circumference were greater than the sixty-inch tape measure that was utilized.

Waist and hip circumference measurements were also tracked during the intervention. For women, a waist to hip ratio of 0.8 or less is considered ideal (Jones, 1995). None of the participants had a waist to hip ratio of 0.8 or less at the beginning or at the end of the intervention. At the beginning of the intervention, the
average waist to hip ratio for the group was 0.94; at the completion of the intervention, the waist to hip ratio was 0.93. Bear in mind that the 60-inch tape measure that was utilized did not even reach around some of the participants at the beginning of the intervention! Even with an average weight loss of 7.5 pounds, no participant had reached the waist to hip ratio of 0.8 or less by the time the intervention was completed. See Table 1 for results of individual participants and team results.

**Table 1**

*Data of individual and team results*

| Team | Code | Code Name | Height | Time one |  | Time two |  | Time three |  |
|------|------|-----------|--------|----------| |          | |            | |
| Pink | P1   | 5’2”      | 173.1  | 31.6     | 44 | 43 | 169.4 | 30.9    | 41.5    | 42     | 170.2 | 40 | 38.5 |
| Pink | P2   | 5’9”      | 195.1  | 28.8     | 40 | 44.5 | 186.4 | 27.5    | 37     | 42     | 183.2 | 34 | 43 |
| Pink | P3   | 5’8”      | 190.8  | 29.0     | 38.5 | 41 | 193.3 | 29.3    | 36     | 42     | 193.8 | 38 | 42 |
| Pink | P4   | 5’5”      | 171.8  | 28.6     | 37 | 45.5 | 169    | 28.1    | 37     | 45     | 155.8 | 38 | 44 |
| Pink | P5   | 5’6”      | 186.5  | 30.2     | 43 | 46.5 | 184.4 | 29.7    | 41     | 42.5    | 182   | 41.5 | 41 |
|      | Total|           | 917.3  | 148.2    | 202.5 | 220.5 | 902.5 | 145.5   | 192.5   | 213.5  | 885   | 191.5 | 208.5 |
|      |      |           |        |          |       | 14.8 (1.6%) | 1.8% | 10    | 17.5 (1.9%) | 1 | 12 |
| Blue | B1   | 6’4”      | 265    | 32.3     | 44 | 48 | 260   | 31.6    | 41     | 44     | 253.6 | 41 | 43 |
| Blue | B2   | 5’2”      | 189.1  | 34.6     | 45.5 | 46.5 | 185.2 | 33.8    | 45     | 43     | 185   | 44 | 45 |
| Blue | B3   | 5’4”      | 197    | 33.8     | 42 | 45 | 196   | 33.6    | 41.5   | 47     | 194   | 41.5 | 45.5 |
| Blue | B4   | 5’3”      | 187    | 33.1     | 42 | 46 | 182   | 32.2    | 42     | 43     | 186   | 42 | 43 |
| Blue | B5   | 5’7”      | 376    | 58.9     | 60 | 60 | 373   | 58.4    | 59.5   | 60     | 362   | 59 | 59 |
|      | Total|           | 1214.1 | 192.7    | 233.5 | 245.5 | 1196.2 | 189.6   | 229   | 237   | 1180.6 | 227.5 | 235.5 |
### Discussion

Initially, the plan was for participants to compete as team members, but the nurses preferred to participate as individuals. Individual results were shared with those involved. Team results were shared on the private web space, but since the web space was not well-utilized, participants were more interested in tracking and challenging each other individually. Participants, who wore the device most regularly experienced the greatest weight loss. Participants also verbalized that they were surprised at the number of steps they took in a day. Once their steps were being tracked and were available to others, it was motivating to move more.

Nurses struggle with unhealthy habits, that result in weight gain, for a number of reasons. Finding ways to motivate nurses to move more and be aware of their activity level is a challenge. The Step It Up Walking Program used in this project, along with the use of FitBits to track and motivate staff movement, was

<table>
<thead>
<tr>
<th></th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>Total</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17.9 (1.4%)</td>
<td>1.6%</td>
<td>4.5</td>
<td>8.5</td>
<td>15.6 (1.3%)</td>
<td>1.5</td>
</tr>
<tr>
<td>Lime</td>
<td>5’3”</td>
<td>5’3”</td>
<td>5’2”</td>
<td>5’5”</td>
<td>5’2”</td>
<td></td>
<td>174.6</td>
<td>31</td>
<td>43</td>
<td>44</td>
<td>161</td>
<td>28.5</td>
</tr>
<tr>
<td>Lime</td>
<td>5’3”</td>
<td>235</td>
<td>41.6</td>
<td>47.5</td>
<td>49.5</td>
<td>228.5</td>
<td>40.5</td>
<td>47.5</td>
<td>50</td>
<td>221.7</td>
<td>47.5</td>
<td>48</td>
</tr>
<tr>
<td>Lime</td>
<td>5’2”</td>
<td>239.4</td>
<td>43.7</td>
<td>50.5</td>
<td>54</td>
<td>236.4</td>
<td>43.2</td>
<td>49.5</td>
<td>54</td>
<td>232.4</td>
<td>48</td>
<td>52.5</td>
</tr>
<tr>
<td>Lime</td>
<td>5’5”</td>
<td>166</td>
<td>27.6</td>
<td>42</td>
<td>45</td>
<td>164.3</td>
<td>27.3</td>
<td>42</td>
<td>43</td>
<td>162.7</td>
<td>45</td>
<td>44</td>
</tr>
<tr>
<td>Lime</td>
<td>5’2”</td>
<td>191</td>
<td>34.9</td>
<td>44</td>
<td>48.5</td>
<td>190</td>
<td>34.8</td>
<td>41</td>
<td>48</td>
<td>188</td>
<td>43</td>
<td>47</td>
</tr>
<tr>
<td>Total</td>
<td>1006</td>
<td>178.8</td>
<td>227</td>
<td>241</td>
<td>980.2</td>
<td>174.3</td>
<td>220</td>
<td>237</td>
<td>959.6</td>
<td>222</td>
<td>231.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25.8 (2.6%)</td>
<td>2.5%</td>
<td>7</td>
<td>4</td>
<td>20.6 (2.1%)</td>
<td>+2</td>
</tr>
</tbody>
</table>
successful. The quantitative results show impressive changes in body measurement, and the interviews with groups and individuals provided insights about how they feel motivate and supported to walk. The participants verbalized that they were surprised at how little they were moving at the beginning of the intervention. Nurses felt as if they were walking at least 5 miles per shift, and it turned out that they were walking not even half that distance. The participants found wearing the device to be motivating and those that walked the most experienced the greatest weight loss. One of the participants stated that she would have liked more participation on the web site, but unfortunately, the other participants preferred to track each other utilizing their smart phones.

Conclusion

This intervention demonstrated that most nurses are motivated to move more when wearing a pedometer device. Implementing this project in the workplace, among friends, and encouraging them to link to one another and share results was very successful in helping the participants to move more and resulted in weight loss. Those motivated by the initial weight loss could then be encouraged to examine their diets and add resistance training in order to tone up further. Any hospital nurse that struggles with a weight issue should investigate purchasing a pedometer device. There are even free apps on smart phones that can track steps, provided the nurse keeps the phone with them at all times. The trick is to find a device that is not intrusive whose results are easily accessed. Many people keep their phones close and like to check them all the time. An app on a smart phone
provides instant gratification to those who enjoy keeping close to their phone. However, not all nurses experienced the same level of success; demonstrating that while this intervention was successful, it is not the single solution to the obesity issue that faces nurses.

Another outcome is that the participants in this intervention enjoyed being held accountable. This took place in two different ways: by conducting the monthly weighing and measuring and also by allowing their step data to be tracked by their peers. Individual weights and measurements were kept private, but staff shared results with each other and those that were struggling to walk as much were questioning their peers that were losing weight more rapidly. It was fun to participate in the different walking competitions that staff challenged each other with. Any participant could be invited to participate in a challenge, such as most number of steps taken in a day or most number of steps taken in a weekend. Not all staff members were interested in the challenges, but it was a venue for participants to encourage one another to move more.

In order for an intervention like this to be successful, it is important for the facilitator to be involved in the intervention as well. As leaders, we may not be able to change the nature of shift work or remove greasy food from the cafeteria. However, we can take control of our health and provide a positive example to others.

While the intervention is officially complete, the participants will keep their FitBits and be able to continue to use them to track activity. All the participants
have kept their devices linked to the phone app and were allowed to continue to view others' activities. Other staff that are interested in the intervention have purchased FitBit devices and are welcome to link with the participants. Participants are encouraged to keep up their level of activity and continue to lose weight and become more active.

This intervention not only increased physical activity and resulted in weight loss and reduction of waist-to-hip ratio, it also functioned as an employee engagement activity and morale builder for staff. The intervention plan and outcomes have been shared with hospital administration as well in hopes of expanding the program throughout the healthcare system.

**Dissemination**

This DNP candidate has contacted the FitBit company to see if they would be interested in sharing our success story. In addition, nurse participants have all received their individual results and the overall group results. A copy of this DNP Capstone writeup will also be provided to the capstone mentor.
References


http://www.channing.harvard.edu/nhs/?page_id=197

http://currentnursing.com/nursing_theory/health_belief_model.html
http://www.healthypeople.gov/
http://shapeup.org/10000-steps/


Appendix A

How do I set up my Fitbit tracker on a computer?

Getting started with your Fitbit tracker requires connecting it to your computer or compatible mobile device so you can view your data, log food, and much more. This article explains how to set up your tracker using a non-Windows 10 PC or an Apple Macintosh computer. If your computer runs Windows 10, see How do I set up my tracker using the Fitbit app for Windows 10?

You'll first install Fitbit Connect, which is a free software application that resides on your computer and connects (“pairs”) your tracker to your Fitbit.com dashboard. Once installed, Fitbit Connect will guide you through setting up your account, charging your tracker (if applicable), and putting your tracker on. If you've already set up one tracker and want to add another to your account, make sure you've read Can I use more than one Fitbit tracker with the same account?

You only need to complete the following steps once. After your tracker is set up, you can simply log in to http://www.fitbit.com to access your web dashboard. If you encounter difficulty with the steps below, see I'm having trouble setting up my tracker.

External

To set up your Fitbit tracker:

1. Go to http://www.fitbit.com/setup. Scroll down and click the pink button. It should reflect the type of computer you're using as shown below. You can change the type if necessary.

2. Depending on your computer:
   1. If you have a PC, an .exe file will download. When the download is complete, click Run when prompted and follow the instructions. If you can't find the .exe file, search for "Fitbit Connect" in the Start menu.
   2. If you have a Mac, you'll be prompted to open or save a .dmg file. Save the file, then open it and follow the onscreen
instructions. If you can't find the .dmg file, search for "Fitbit Connect" in Spotlight.
3. Select **Set Up A New Fitbit Device** when you're presented with the Fitbit Connect main menu.
4. Choose whether you're new to Fitbit or you already have a Fitbit account.
5. You will be asked for a few details about yourself. This information improves the accuracy of your caloric burn and distance data. If you want to share your data with Fitbit friends later, you can adjust your privacy settings.
6. When prompted, select the tracker you're setting up.
7. Plug the wireless USB sync dongle into your computer and bring your tracker near to it to begin the connecting ("pairing") process.

![USB Sync Dongle](image)

8. Follow the onscreen instructions. If you have a Flex, rapidly tap the device when instructed and then confirm that you felt the vibration. For all other trackers, a four-digit number appears when Fitbit Connect identifies the tracker. Enter this number on the screen when prompted.
9. Click **Next** and your tracker will connect to your Fitbit.com account. This can take up to a minute.
10. Once your tracker has connected to Fitbit.com, you may be prompted to enter a greeting (depending on which tracker you have). This can be your name or any 8-character combination of letters or numbers.

When your tracker is linked with your Fitbit account, you'll see a notification and some basic instructions on using your tracker. You're ready to start moving!

Appendix B

How to sync your device

Once you've set up and started using your new tracker, you'll want to regularly "sync" (transfer) its data to your fitbit.com dashboard on a computer or one of the Fitbit apps. Syncing your data ensures that you can see all your activity history, earn badges, analyze your sleep logs, and much more. This article answers common questions about syncing your tracker with a computer.

- When will my tracker sync with my fitbit.com dashboard?
- When will my tracker sync with the Fitbit app for Windows 10?
- Do I need to sync my tracker every day?
- Can I sync my device through multiple computers?
- Can I sync multiple Fitbit devices to one account?

When will my tracker sync with my fitbit.com dashboard?

Your Fitbit tracker will automatically sync through your computer every 15 minutes or so if the following requirements are met:

- There is new data to upload
- Your computer is powered on, awake, and connected to the Internet
- Your plugged in base station (for Ultra) or wireless sync dongle (for all other trackers) is inserted into a working USB port
- Fitbit Connect is installed and running
- Your tracker is within 15-20 feet of your computer

To see when the most recent sync occurred, click the gear icon at the top-right of the fitbit.com dashboard.

If you sync your tracker with your computer and also with a mobile device that uses Bluetooth (such as an iOS device running the Fitbit app for iOS), your tracker will not sync with your computer unless you move the mobile device out of range or disable Bluetooth.
When will my tracker sync with the Fitbit app for Windows 10?

If you're using the Fitbit app for Windows 10 on your computer, your tracker syncs each time you open the app and whenever you manually sync. If your computer is Bluetooth enabled, the Fitbit app for Windows 10 does not require Fitbit Connect or a wireless sync dongle.

Do I need to sync my tracker every day?

A daily sync is recommended but not required. All Fitbit trackers can record detailed minute-by-minute data for 7 days, so if you're able to sync weekly your complete minute-by-minute-data will be available. For trackers that monitor heart rate, heart rate data is stored at one-second intervals during run or exercise tracking and at five-second intervals at all other times. Daily totals are stored for 30 days, so if you're only able to sync monthly you can see your daily totals on your dashboard.

Fitbit Surge can store a maximum of 35 hours of GPS data. If you try to track more than 35 hours’ worth of GPS data without syncing, older data will be deleted to make room for new data. To ensure that all your GPS data is saved on Fitbit.com, sync your Surge regularly.

Can I sync my tracker on more than one computer?

You can sync your tracker through any computer that meets syncing requirements. In most cases this means Fitbit Connect is installed and a wireless sync dongle is plugged in. Bluetooth-enabled Windows 10 computers running the Fitbit app for Windows 10 do not need Fitbit Connect or the dongle.

Can I sync multiple Fitbit trackers to one account?

If you like to use more than one Fitbit tracker you can add them all to your account, though different people should not share an account.
